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MIGRATORY PNEUMONIA*

Report of a Case

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The case I wish to discuss is one of migratory pneumonia, sometimes called "creeping" or "wandering pneumonia, in which different lobes of both lungs were successively involved. In this case, as is common, the onset of the attacks was gradual, exacerbations of symptoms occurring at the time of migration of the pneumonic area, but it presented unusual features in that the onset in one attack was sudden and also in that in three instances the temperature dropped by crisis and in only one by lysis.

The child, born in Delaware of American parents, male, 27 months old, white, normal birth, bottle fed, was an apparently normal child. Beyond some difficulty with his feeding in the first few months of life there was no history of any illness.

When the child first came under observation careful examination revealed him to be suffering with acute naso-pharyngitis complicated by a right otitis media. Other than these findings, physical examination was negative. The naso-pharyngitis apparently cleared up, the otitis media subsiding spontaneously without rupture of the tympanic membrane. The temperature subsided and on the third day was normal. Examination at this time revealed crepitant rales in the right middle lobe. On the following day the temperature became somewhat elevated. This elevation increased daily for four days and the lung signs became more and more pronounced until a diagnosis of lobar pneumonia of the right middle lobe was definitely ascertained. There was no evidence of any involvement of any of the other lobes. Consultation confirmed these findings. Two days later the temperature dropped to normal by crisis within twelve hours. It remained normal for thirty-six hours, when it once more gradually rose.

Three days later the child was admitted to the Wilmington General Hospital. By this time the temperature had reached 104° F., and there were definite signs of pneumonia in the left lower lobe. The next day the temperature dropped to normal within eight hours. This was followed by a slight recrudescence resembling a post-pneumonic rise. Two days after the crisis the temperature was again normal and remained normal for three days. On the fourth day the temperature once more started to climb and four days later reached its peak. There was then definite involvement of the right lower lobe. Owing to the peculiar nature of this infection and despite the fact that this and other areas of involvement had been confirmed by consultation, an xray picture was taken to confirm the diagnosis as to the area involved. The roentgenologist reported: "lobar pneumonia, involving the right lower lobe." This same day another crisis occurred and the temperature within sixteen hours was normal and remained so for two days. In contradistinction to the previous attacks the temperature now rose sharply to 103.4 and there were definite signs of lobar pneumonia in the right upper lobe. In this attack on the third day there was apparently an attempted crisis, but the temperature did not reach normal before it again elevated and then returned to normal by lysis on the seventh day.

The most important complications occurring during the entire course of the disease were tympanities and diarrhea, the latter being by far the more persistent. They occurred at intervals during the entire course of the disease until convalescence was well established. Another marked feature was the extreme prostration of the child following the last attack. The otitis media never returned. There was definite amnesia and aphonia, showing severe cerebral toxicity. Resolution of the right middle and left lower lobes occurred apparently rapidly, but it was delayed in the right lower and right upper lobes.

On admission, the blood count showed 3,750,000 R.B.C.; 20,250 leucocytes, 92% polynuclears; hemoglobin 75%. The urine was negative and remained negative throughout the en-

*Read before the New Castle County Medical Society, Wilmington, November 18, 1930.



tire infection. The red count remained practically the same. The hemoglobin gradually dropped, the lowest point reached being 50%. Pneumococcus was reported from throat swabs. No acid-fast organisms were found at any time. During the interim between the second and third attacks the leucocyte count was 12,200 polynuclears, being 80%. At the height of the third attack, the count rose to 12,800 polynuclears, 82%. At the fourth attack the count rose to 14,600, 86% polynuclears. Following the last attack the count averaged between 10,000 and 12,000, the polynuclears between 60 and 66%.

On admission to the hospital the treatment was largely stimulative. Whiskey was freely given throughout. The persistent diarrhea was controlled with bismuth preparations by mouth and starch enemas. Tympanitis was combatted by alkaline colonic irrigations and turpentine stupes. Digitalis, caffeine, sodium benzoate, and adrenalin were employed as indicated. Ammonium, carbonate and chloride, with diathermy, were used to hasten the delayed resolution in the right upper and lower lobes. Later the ultra-violet ray was substituted for the diathermy. Glucose and saline solutions were frequently administered both subcutaneously and intraperitoneally. During the last attack transfusion of 200 cc. of citrated blood was performed. During early convalescence 150 cc. of whole blood, not citrated, was given intraperitoneally.

Convalescence was extremely prolonged, due to marked anorexia and the apparent inability of the child to assimilate any food. Feeding presented a distinct problem. Dilute hydrochloric acid, tincture of nux vomica, and whiskey were used during this stage. Later, cod liver oil and viosterol were added. The amnesia and aphonia, apparently due to the severe infection, were well marked during this stage, in fact the child never spoke or cried until two days before discharge. Muscular movement was slow in returning, and

muscular co-ordination even slower. Subsequent to discharge these mental conditions are gradually improving.

The child was discharged one month and twenty-five days after admission to the hospital, apparently well on the road to recovery. Roentgenographic findings two days before discharge were: "No lung abnormality apparent."

Some of the most striking features of the case were: first, the acute onset of one of the attacks; second, the atypical crisis of the first three attacks, in contradistinction to the lysis of the last; third, the absolutely sharply marked areas of involvement; fourth, the extreme prostration of the child as evidenced by the relative leukopenia of the later blood counts; fifth, the marked anorexia during convalescence; sixth, the marked, prolonged aphonia and amnesia; and seventh, the return of the lungs to normal at discharge.

With regard to the treatment, emphasis is laid upon the free use of whiskey, repeated use of glucose and saline solutions, of diathermy, and of blood.

Iron and Copper in Treatment of Anemia in Children

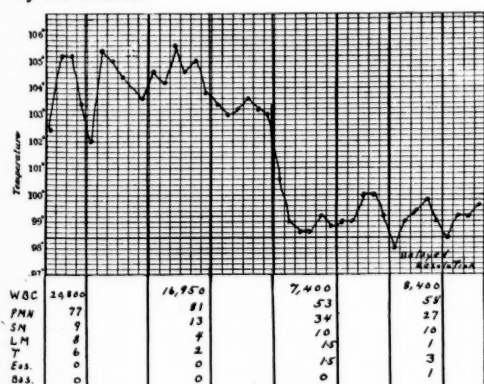
As there is still some controversy in the literature as to the effects of iron in the treatment of anemia in children, it occurred to Milton Smith Lewis, Nashville, Tenn., (*Journal A. M. A.*, April 4, 1931), that it was of considerable importance to determine whether the effect of iron could be enhanced by the addition of copper, and it was felt that a study of the therapeutic action of these two elements may help to demonstrate their value or lack of value as possible therapeutic agents in the treatment of anemia in children. It was found that iron and copper given in combination to thirty-four children with nutritional and secondary anemia was more effective than iron given alone. This was particularly noticeable in the nutritional series.

THE WHITE BLOOD PICTURE IN PNEUMONIA*

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In recent years great advances have been made in what may be called laboratory medicine. Chemical analysis of the blood has experienced a great impetus; the xray is relied upon more and more; the electrocardiogram, basal metabolic examinations, protein sensitization tests, non-surgical biliary drainage are some of the procedures receiving the special attention of the profession. At times there seems to be more technical laboratory data than can be correctly interpreted, and such data incorrectly interpreted are worse than none. Therefore, any effort to evaluate further even an old established laboratory procedure is justifiable. In attempting to clarify the large muddled group of blood dyscrasias the haematologists have made considerable progress by morphological blood studies in the differentiation of the leukemias, primary and secondary anemias. Further study of the white blood picture has discovered characteristic findings for infectious mononucleosis, pertussis, agranulocytosis, aleukemic leukemia, and other diseases; and yet except for occasional spasmodic efforts little attention has been paid to the morphology of the blood in conditions apart from the blood diseases.

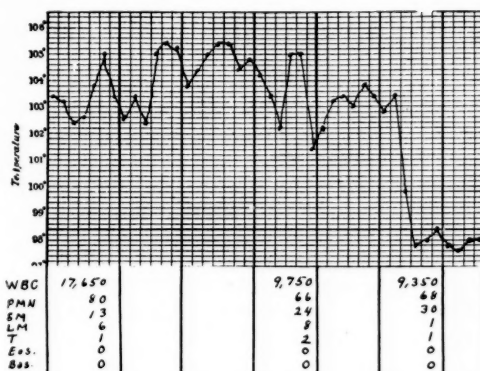
Four of the nine cases mentioned are illustrated* by the charts.



(CHART I.)

Case 1. Moderately severe pneumonia with initial white blood picture indicating a fair prognosis. Third hospital day—lower total count with increase in lymphocytes, indicating a slight change for the better. Fifth hospital day—total count drop to normal, decrease in P.M.N. and return of eosinophiles, temperature normal. Seventh hospital day—Slight temperature elevation but with an increase in the eosinophiles, indicating no complications. Uneventful convalescence thereafter.

* Read before the New Castle County Medical Society, Wilmington, November 18, 1930.



(CHART II.)

Case 2. First hospital day—Blood picture indicates moderately severe infection. Fourth day—Sudden elevation of temperature with other clinical signs suggesting a possible extension of the disease; total count, however, dropped to normal with coincident decrease in P.M.N. Forty-eight hours later crisis and uneventful convalescence.

In everyday practice, aside from a few general considerations, little attention is paid to the white blood picture in acute infections. Leucocytosis or leucopenia is noted, and any gross change in the differential count. If the eosinophiles are increased, parasites and allergy are considered. A leucocytosis is thought of as indicating an infection or a good response to infection. A leucopenia, unless typhoid, malaria, grippé or measles is in question, is probably construed as a bad prognostic sign, and yet many cases of appendicitis with marked leucopenia recover without mishap. Some attention also in a rather haphazard way is given to the percentage of the polymorphonuclear neutrophils. From such a consideration of the blood there is obtained very little practical aid in the treatment or prognosis of the ordinary acute infection such as pyelitis, appendicitis, osteomyelitis or pneumonia.

To improve this situation a new laboratory procedure is perhaps not so much needed as is a correct interpretation and more frequent and proper use of the one we already have. Arneth attempted an interpretation by dividing the neutrophils into many different classes by gradation in the lobulation of their nuclei, and developed his celebrated and very impractical nuclear shift. Schilling in his most interesting and comprehensive book on the "Blood Picture," translated into English in 1929 by Gradwohl, adopts a much more practical interpretation by what he calls a hemogram. This procedure, the details of which were so ably discussed by Dr. Samuel D. Ear-

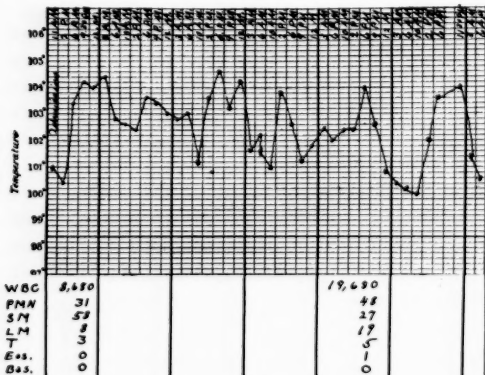
hart at the 1930 meeting of the Medical Society of Delaware, though the most valuable and accurate interpretation of the white blood picture, is nevertheless rather too laborious for the already encumbered hospital or private clinical laboratory, except perhaps in especially picked cases. However, Schilling does lay down certain general premises which he supports by multitudinous case reports. Here again we have a more accurate correlation of old facts rather than the presentation of new ones. It was the realization of this which prompted us to review all the cases of pneumonia in children which were treated in the hospital for the last three years. Of these we have chosen nine to demonstrate tonight. These nine represent all the cases which had blood counts made often enough to enable us to draw conclusions. No cases were omitted for other reasons. Following Schilling's premises, which will be explained in a moment, an accurate prognosis might have been given in every single case and was given in several.

The premises:

I. Daily or frequent counts are advisable. Otherwise it is not possible to determine accurately whether the infection is in the upward or downward trend.

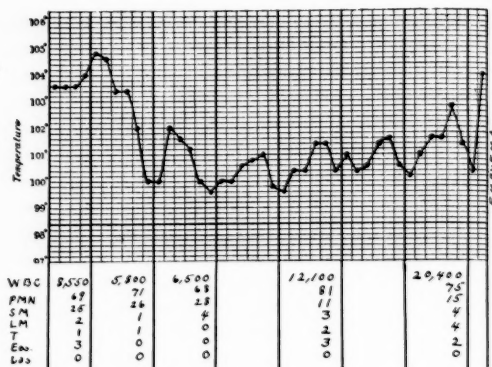
II. The three Leucocytic Phases:

In most infectious processes the neutrophils respond to the irritation first, then the monocytes, and finally the lymphocytes. In the first phase, so-called neutrophilic battle phase, the neutrophilic percentage is high. As the infection is being



(CHART III.)

Case 3. Initial count revealed extremely severe infection with a low total count and P.M.N. percentage below normal. Fifth hospital day—patient still very sick, total count rose, P.M.N. increased and eosinophiles made their appearance. Forty-eight hours later, in keeping with this blood picture there was clinical improvement and subsequent recovery.



(CHART IV.)

Case 4. Patient in semi-coma, extreme dyspnoea, marked cyanosis, blood picture indicating extremely virulent infection, especially with a lower total count on the second day and disappearance of the eosinophiles. Fifth hospital day—increased total count, increased P.M.N., reappearance of the eosinophiles, indicated an improving condition. Seventh hospital day—high total count, decreased P. M. N., decreased eosinophiles, indicated an aggravated but not overwhelming condition. Forty-eight hours later an empyema was proven and recovery eventually ensued.

overcome the second or defensive phase occurs in which the neutrophilic percentage decreases and the monocytes increase. In the third phase, that of recovery, the lymphocytic percentage increases perhaps even above normal.

III. The Eosinophiles: They are the most sensitive cells in infection, disappear early; and return usually as the first favorable sign.

IV. Differential Count vs. Total White Count.

Simultaneous consideration of both is essential.

1. High neutrophilic percentage with a high total count is a favorable reaction to infection; with a normal count, is less favorable; and with a falling count and no eosinophiles, extremely unfavorable.

2. Constant presence of eosinophiles even with a hyperleucocytosis is favorable.

3. An increasing leucocytosis with decrease or disappearance of eosinophiles indicates an aggravated condition.

4. Reappearance or increase of eosinophiles with a receding neutrophilia and increase in monocytes or lymphocytes is very favorable, particularly with a falling total count.

Applications of these premises to the individual case gives an accurate index to the final outcome frequently before it can be detected clinically.

RUMINATION IN INFANCY*

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I wish to discuss for a short time a problem in infant feeding, which is frequently not recognized by physicians but is very distressing to parents and which can be successfully handled by diet alone. I refer to rumination in infants. We all know how a cow chews its cud or ruminates, but how many of us have watched a baby do the same thing? And yet babies do so quite frequently.

In looking up the subject, we find very little in the literature. Holt devotes two paragraphs to the subject. Grulee in Abt's Pediatrics discusses the subject in four pages. The Batchelors, in their monograph, review the whole subject very thoroughly and give a splendid bibliography.

The *pathology* of the condition is most interesting. It is found in mentally alert, precocious, high-strung infants. It is undoubtedly a neurotic habit, closely allied to thumb sucking, nail biting and masturbation. The mechanism of the act, Grulee suggests, is an "over action of the sphincter muscles in the upper portion of the alimentary canal."

The *symptoms* are very clear cut. The attacks come on with definite regularity a few minutes after the beginning of the feeding. The child's head is thrown back, the thorax is arched, and the abdomen contracted. The tongue is worked back and forth in the mouth, and a clucking or gurgling sound is made in the throat until the milk is brought up into the back of the mouth. A portion of it is then pushed out by the tongue and the remainder is swallowed. I have seen as many as ten such attacks occur within twenty minutes. The face often becomes quite red but not cyanotic. These children never vomit at night nor when they are having naps. The attacks usually come on right after feeding, but may occur as late as two hours afterwards. One of my patients *ruminated* almost constantly from one feeding to the next except when she was asleep. Because of the amount of food lost these children are usually very thin and undernourished, and often present a picture of marasmus.

The *diagnosis* is not a difficult one but is time-consuming, for it is necessary to watch the child being fed and then to observe it for some time after feeding. This should be done with

the child undressed and in the mother's arms, as it is more apt to terminate when in a comfortable position and in familiar surroundings. I find that the mother does not usually know that the child is doing any particular *kind* of vomiting but does realize that she can tell when the vomiting is about to occur by the gulping or gargling noise the baby makes before the food is brought up into the back of the pharynx.

Prognosis—In some cases Grulee thinks the mortality is from 25 to 50% due to marasmus. In mild cases, the mortality is low unless there is some inter-current disease before the nutrition is improved.

Treatment—The drug treatment has been very unsatisfactory. This consists in the use of sedatives to keep the baby asleep as many hours a day as possible.

The mechanical treatment is more successful. This is best carried out by making a well-fitting cap out of canvas or other stout material, with wide bands which cross and fit very tightly under the chin and are attached to the top of the cap. This draws the baby's lower jaw up and forward and keeps the mouth so closed that the child is unable to make the tongue motions necessary to the regurgitation of the food. If the baby does not sleep immediately after feeding it is of great help to have some one amuse him and keep him interested until at least a portion of the food has passed through the pylorus. It seems to me that the most successful treatment of the condition is feeding with thick food. Even this can be *ruminated*, but it is more difficult for the baby to do it, and the habit is therefore more quickly abandoned.

The feeding I use is thick farina. This can easily be started at six weeks or earlier and be kept up for months. It is made with milk, water, any desired carbohydrate, and farina. It is boiled two hours and should when cold be thick enough to be cut with a knife. As the child gets older the proportion of milk, water, and carbohydrate may be varied, and vegetable puree added to the mixture. Still later the mixture may be made with part beef broth, and thus a well-rounded but thick diet be evolved. The mother must be warned to give the orange juice, cod liver oil, viosterol and water not sooner than two hours after feeding. The method of getting the thick cereal into a baby is quite simple if an ordinary nipple is plugged with a cork, the nipple then dip-

* Read before the New Castle County Medical Society, Wilmington, November 18, 1930.

ped into the farina and the baby allowed to suck it off. The handle of a teaspoon or a butter spreader can usually be substituted by the third month as a feeding implement. Some of these babies will stop ruminating after two months, when it is safe to substitute one cow's milk feeding, usually at night. Others have to be kept on the farina for months, even a year. The patient gains so well on it that it is often hard to persuade the mother to try liquid feedings again.

I have followed one ruminator for twelve years, two others for six years, and many for shorter periods. They do well, but are very apt to have attacks of rumination if they are ill from any cause, or are nervously upset.

It is often a great comfort to the parents of a ruminating baby to know that they have in their hands a precocious child who is almost sure to lead his class in school and be a credit to them in later life.

SOME MODERN ASPECTS OF INFANT FEEDING*

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Twenty years ago or so, as some of you may remember, we were taught that as soon as the danger signal, "the loose green stool," appeared a good dose of castor oil was to be given, the milk was stopped, and barley water or plain boiled water was the order of the day until the stools commenced to return to normal. After this starvation it was more or less a case of the survival of the fittest, and one of three things usually occurred; the baby got well and milk feeding was resumed, or there was a prolonged convalescence bordering on malnutrition and marasmus, or finally the physician was no longer needed, and the undertaker officiated. The latter services were required only too often, I am sorry to say. This class of case was also surfeited with some preparation of bismuth, paregoric, starch and laudanum enemas, etc., ad nauseum.

Thanks to the rapid advance in our knowledge of dietetics, to the improvement of our milk supply, to the establishing of welfare centers, and finally to the hard and earnest work of pediatricians throughout the world, the sad picture of two decades ago has largely changed to a much brighter one.

While our initial treatment of withholding all food for a few hours and cleaning the intestinal tract has not changed materially, our after-treatment has made a marked advance. There is no doubt that the period of starvation lowered the child's strength and resistance to further invasion, prolonged the after convalescence, and sometimes brought about a fatal issue. Today, depending of course upon the severity of the case, we can usually resume our feeding a little earlier, and more confidently, with some form of sour milk. Of these we have several at our command: protein milk, reinforced or concentrated protein milk, lactic acid milk, or buttermilk.

What with the fact that these children are often badly nourished to begin with, together with the constant drain of the diarrhoea, it is vitally important that they get sufficient food, and that this food should be easily tolerated and digested. As most of you know, all of these fermented milks resemble each other, because the fermentation is caused by lactic acid organisms. Their value lies in their low sugar and high protein, together with the lactic acid content. *Acidophilus* milk is another of the same type. They are of value not only for the treatment of intestinal troubles, but for the feeding of normal infants. Their disadvantage lies in the difficulty of their preparation, with the exception of buttermilk, which can be easily obtained, but varies greatly in its composition and is often contaminated.

An intelligent mother can prepare most of them, and right here I would like to say that nothing is more important in treating infants and children than the co-operation of an intelligent mother. There are so many things that enter into our care of children outside of the mere giving of a dose of medicine, that it is almost impossible to do good work without her education and help.

One other thing we must remember in our use of the sour milks, and that is their too-prolonged use will not necessarily increase the weight of your patient because they are still to a certain degree being underfed. The reason for this is that their caloric value is much lower than breast milk or whole cow's milk. Following is a table showing the caloric values of the various milks.

Protein milk, cal. per oz.	13
Reinforced milk, cal. per oz.	18
Buttermilk, cal. per oz.	14
Breast milk and cows, cal. per oz.	20
Lactic acid whole milk, cal. per oz.	20
Condensed milk (sweet), cal. per oz.	95
Malt soup, cal. per oz.	70 to 80

* Read before the New Castle County Medical Society, Wilmington, November 18, 1930.

I give the value of the last two for reasons that I will explain later.

You can raise the value of your milk by the addition of sugar in some form, such as dextro-maltose, cane sugar, lactose, or corn syrup, but when you come to this point you must bear in mind the effect sugar may have on the bowel condition. Some infants cannot stand sugar in any form, while others will stand a surprisingly large percentage. Milk sugar, or lactose, which is the sugar found in breast as well as cow's milk, would seem theoretically to be the best, but strange to say it gets more condemnation from pediatricians generally than any other kind.

You may call me mid-Victorian, but I have always had the belief that the good Lord did not put lactose in both mother's and cow's milk without a good sound reason. That statement may not be scientific, but it is good doctrine. My own experience is that where cane sugar is well borne, the baby gains the best. It is less expensive and not as laxative as milk sugar. Dextro-maltose does seem to be better tolerated after or even during diarrhoea, and is theoretically supposed to cause less irritation in the intestinal tract. Corn syrup is another useful, cheap, and fairly well tolerated form of sugar, well worth trying in cases not doing satisfactorily on the other kinds of sugar.

I now come to two valuable foodstuffs, in certain cases, which have a very high caloric value due to the high sugar content, viz: sweetened condensed milk, and malt soup. It is rather disconcerting to the scientific mind, after struggling along with a difficult feeding case for several weeks, trying one after another of the different forms of milk upon which science has placed its seal of approval, and then having to turn in desperation to something that comes out of a can; then presto—a brilliant result.

The scientific mind would explain this occasional phenomenon on the ground that it was not condensed milk nor even malt soup per se which had turned the tide, but a food with high sugar content had been accidentally emptied into a child with a splendid tolerance for sugar. However, let us give the devil his due and not condemn the rickety bridge which carried us safely over. Do not indulge in these canned foods too long, or you will ultimately meet with disaster; after all is said and done, it is results that we are after. I am not being retained by

the sugar trust and I only speak of such results to show what can be done by keeping our minds open and receptive to different methods of infant feeding.

I have made reference to acidophilus milk, and to those of you who may not be familiar with it I will explain that it is another form of lactic acid milk except that it is made with the human strain of bacilli instead of the animal strain. We have several cases in our wards at the hospital on this form of milk, all doing well. All of them had been doing badly on the other forms of milk. I cite these cases merely to show how you have to switch your diet until you find one appropriate to a particular case.

There is no royal road to success in the feeding of infants, in spite of the tremendous advance made in the past decade. We must keep our minds open and elastic, and not be too hide-bound in our opinions; it is still the "Theory and Practice of Medicine" with the accent on the "Theory," and our little patients are sometimes sacrificed on the altar of so-called science as well as on the altar of ignorance.

A Tonsil Exerciser

You've no need to light a night-light
On a light night like tonight;
For a night light's a slight light,
And tonight's a night that's light.
When a night's light like tonight's light
It is really not quite right
To light night-lights with their slight lights—
On a light night like tonight.

—*Kalends.*

There is hardly anything in this world that some men cannot make a little worse and sell a little cheaper.—*Ruskin.*

Studies of Calcium and Phosphorous Metabolism

Walter Bauer, William T. Salter and Joseph C. Aub, Boston, (*Journal A. M. A.*, April 11, 1931), have found that the very slow, intravenous administration of 20 cc. of a sterile solution of 5 per cent calcium chloride promptly relieves the severe pain of colic caused by lead, or ureteral or biliary stone. The relief afforded by such therapy is more rapid and more constant than that by other forms of treatment they have employed.

What's a Cow?

The following illuminative essay on the subject, "What Is a Cow?" was published in the *St. Johns' Record*, Collegeville, Minnesota, and is attributed to Wilfred Ludowese, a college student:

"The cow is a female quadruped with an alto voice and a countenance in which there is no guile. She collaborates with the pump in the production of a liquid called milk, provides the filler for hash, sausages, and similar objects and at last is skinned by those she has benefited, as mortals commonly are.

"The young cow is called a calf and is used in the manufacture of chicken salad, breaded veal and other uses of which no further knowledge is necessary.

"The cow's tail is mounted aft and has a universal joint. It is used to disturb maurauding flies and the tassel on the end has unique educational value. Persons who come in contact with the tassel have vocabularies of peculiar and impressive force.

"The cow has two stomachs. The one on the ground floor is used as a warehouse and has no other function. When this one is filled, the cow retires to a quiet spot where her bad manners will occasion no comment. The raw material thus conveyed for the second time to the interior of her face is pulverized and delivered to the auxiliary stomach, where it is converted into cow.

"The cow has no upper plate. All of her teeth are parked in the lower part of her face. This arrangement was perfected by an efficiency expert to keep her from gumming things up. As a result she bites up and gums down."—*Kalends*.

Mass Employment

Even though 1929 was a peak year, ninety-two out of every hundred American families were unable to earn enough to require filing a personal income tax report. They average only forty-one dollars a week, while the income of the lucky remaining eight families reached an average of two hundred dollars a week, according to a statement made recently by L. C. Harbison, president of Household Finance Corporation, Chicago, who based his findings upon facts revealed by the latest income tax and census returns.

"In 1929, generally considered as a prosperous year, only eight out of every hundred of the

nation's families could be considered really prosperous," said Mr. Harbison. "The other 92 made a nice living so long as no emergencies such as sickness or unemployment arose.

"Back in the 'good old days' our forefathers were not bothered by depressions. When game became scarce in one locality, they merely had to change hunting grounds. But now under our modern industrial system ninety-two out of every hundred families must have an unbroken weekly income, to provide even the necessities of life, food, clothing and shelter.

"For the vast majority of families who must get along on an average of forty dollars a week, it is almost impossible to build up a reserve large enough to tide over emergencies, with the result that local merchants and professional people find themselves carrying thousands of dollars in uncollectable accounts, hurting the manufacturer, the producer and labor alike—a vicious circle.

"American business and industrial leaders are challenged to prevent these recurring cycles of unemployment. Personal financing, now being developed under the Uniform Small Loan Law, enables people to get up to \$300 in cash for paying back rent, grocery, doctor, and other bills, a valuable service particularly to those just resuming work. But there is no substitute for steady wages. If we expect 92 per cent of our families to buy and consume continuously their share of what we produce, we must stabilize their source of income by providing steady work. Mass employment is the next problem to solve in this age of mass production, mass distribution, and mass finance."

Isolation of *Brucella Abortus* From Human Fetus

Charles M. Carpenter and Ruth Boak, Ithaca, N. Y. (*Journal A. M. A.*, April 11, 1931), report the first instance in which *Brucella abortus* was isolated from a human fetus. They were unable to determine whether the placenta as well as the fetus was infected or to study it histologically; but, basing their opinion on the mode of infection in other species of animals, such must have been the case. They believe that in this case the abortion was the result of an infection with *B. abortus* and that physicians investigating the pathology of the genito-urinary system should consider more frequently *B. abortus* as a possible etiologic agent of disease in these tissues.

EDITORIAL

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Vol. III MAY, 1931 No. 5

IS IT REALLY SO?

That remarkably accurate weekly news-journal, *Time*, in its issue of April 6, 1931, contains an item credited to a Delawarean which furnishes food for thought. We reproduce the article in its entirety below, minus the very good photograph; the italics in the "excerpt" are ours.

COCKTAILS AND KINGDOM

Protestant Episcopal Bishop Philip Cook of Delaware, 55, has lived and worked in the sprightly city of Wilmington since 1920. He was born in Missouri on the 4th of July, schooled in Connecticut (Trinity College), has been a missionary on the Dakota plains, a vicar in Manhattan, a rector in San Antonio, Tex., a Y. M. C. A. secretary in France. Last week he preached a Lenten sermon at St. Stephen's Church at 10th and Chestnut Sts., Philadelphia. Excerpt:

"Many of us would be astonished if we knew how many surgeons, lawyers, actors and men in many other professions are accustomed to use stimulants before they are to perform an operation or when they want to key themselves up to meet an important situation.

"Hostesses serve cocktails, not only to whet the appetites of their guests, but to insure the dinner being lively. But people are forgetting the biggest thrill in life. If we want to be lifted out of the commonplace and monotonous we should help to put over the Kingdom of God. He holds a monopoly on thrills for us, in working out His eternal concepts."—*Time*, April 6, 1931.

The Bishop says we "would be astonished if we knew," and we agree with him; in fact, none of the nation's citizenry would be more astonished than the surgeons themselves, assuming that the Bishop has been quoted correctly. We have a large acquaintance among the surgeons of this country, an acquaintance that extends from coast to coast, one which includes many of the acknowledged leaders of the surgical profession, to say nothing of a whole army of the lesser lights; in fact, we know surgeons from the veriest tyros up to and beyond "the fourth finest surgeon in America," and besides all these, we have some knowledge of a host of others, but in all our experience and observation we have *never* seen, known of, or heard of *any* surgeon taking a stimulant before an operation, unless a cup of coffee or a glass of coca-cola be considered a stimulant.

On the contrary, we doubt if any class of people in the world are more sober or more serious than the surgeons as they are about to perform their operations, dealing as they do with that most precious thing on earth—human life. Even the surgeon of light-hearted mien or convivial habits realizes the seriousness of his task as he enters his operating room, and be it said to the credit of the profession the operator who does not conform to this standard is a medical anomaly. Further to the contrary, we have personal knowledge of at least two surgeons who never begin an operation without a silent prayer to Almighty God that their efforts may be successful. Even the casual remark to the interne, "Well, I hope this is going to pan out all right," is equivalent to a prayer.

If the Bishop has been quoted correctly he is either "talking through his hat," as it were, or else he is in possession of facts that should be placed before the profession promptly. His duty is plain: if the former, he owes the surgical profession an immediate retraction and apology, for his remarks were made before a lay audience and were presumably carried far and wide. If the

latter, he should, as the exponent of that Jesus who drove the money-changers from the temple, lay his facts fully and fearlessly before the medical profession, so that they too can clean house.

But again, it is barely possible that *Time* may have taken its story from some Philadelphia newspaper, which in turn may not have quoted the Bishop correctly. In either case, THE JOURNAL calls upon the Bishop to answer.

EDITORIAL NOTES

DEAR DOCTOR:

THE JOURNAL and the Cooperative Medical Advertising Bureau of Chicago maintain a Service Department to answer inquiries from you about pharmaceuticals, surgical instruments and other manufactured products, such as soaps, clothing, automobiles, etc., which you may need in your home, office, sanitarium or hospital. We invite and urge you to use this Service.

It is absolutely free to you.

The Cooperative Bureau is equipped with catalogues and price lists of manufacturers, and can supply you information by return mail.

Perhaps you want a certain kind of instrument which is not advertised in THE JOURNAL, and do not know where to secure it; or do not know where to obtain some automobile supplies you need. This Service Bureau will give you the information.

Whenever possible, the goods will be advertised in our pages but if they are not, we urge you to ask THE JOURNAL about them, or write direct to the Cooperative Medical Advertising Bureau, 535 N. Dearborn St., Chicago, Illinois.

We want THE JOURNAL to serve you.

The 1931 Annual Session of the American Medical Association will be held in Philadelphia, June 8-12. The program is a most excellent one, and the attendance will probably establish a new record. With the most distant point in Delaware only 125 miles from Philadelphia, there is no excuse for any Delaware doctor not being in attendance at least one day. Certainly, it is the duty of every Fellow or member of the A. M. A. to attend, and to register.

To the list of Fellows of the American College of Physicians given in our April issue should be added the name of Dr. Olin S. Allen, who was admitted last year. And speaking of national societies, Dr. Margaret I. Handy has been elected a member of the American Academy of Pediatrics, a research and clinical society, which will hold its convention in Atlantic City on June 12-13, following the meeting of the A. M. A. in Philadelphia.

Now that the Legislature is over a brief survey can be made of the bills that had some bearing, direct or indirect, on the medical profession or the hospitals. Those that passed were:

1. A bill raising the entrance requirements for nurses' training schools to a preliminary education of four years in high school; authorizing the State Board to establish a curriculum, and to inspect all nursing schools.

2. A bill providing that in case of automobile accident no insurer or insured may make a settlement with the injured without first paying the bills of the physician and hospital.

3. The Workman's Compensation Act was amended, raising the liability of the employer to a total of \$150; the former limit was \$100.

4. Appropriations for the maintenance and expansion of the State-owned hospitals.

Among those that were defeated or vetoed were:

1. A bill to establish a separate Board of Chiropractic Examiners.

2. A bill to establish a separate Board of Osteopathic Examiners.

3. A bill granting membership in the Medical Council to the osteopaths.

4. A bill granting the physicians the right to prescribe alcoholic medicinals.

On the whole, the Legislature acted intelligently and constructively, and, together with the Governor, gave the medical profession more consideration than for many sessions past.

It is not too early to lay plans now for the next session of the Legislature. Three bills at once come to mind as being necessary or highly desirable.

1. A Basic Science Act, similar to those operating so successfully in Arkansas, Connecticut, District of Columbia, Minnesota, Nebraska, Washington, and Wisconsin. This type of legislation is fair to all applicants, and effectively eliminates the cults and quacks. Our two-board system would be replaced by a single board that examines only in the so-called "basic sciences."

2. A bill to place the claims of the doctor, nurse, druggist, and hospital on a parity with the claims of the undertaker against the estates of deceased persons. A highly satisfactory bill of this kind has just been passed in Arkansas.

3. A definitive act concerning privileged communications. Delaware has no such law, except that the Workman's Compensation Act specifically denies any privileged communications in all cases within the purview of said Act. The new law should make plain the physicians' rights and duties, including such matters as reports to insurance companies, corporations, employers, etc.

In Tampico, Mexico, Enrique Bosdet and Salvador Rodriguez patented a contraption to be fastened to coffins so as to ring a bell above

ground at the slightest movement within the coffin. (Mexican law requires that a body be buried within 24 hours after death; embalming is rare; danger of burial alive in Mexico is great.) Cost of the gadget: ten pesos (\$4.76).—*Time*.

DELAWARE PHARMACEUTICAL SOCIETY

Studies in Carbohydrate Metabolism*

JOHN C. KRANTZ, JR., PH. D.
BALTIMORE, MD.

The title of this paper, "Studies in Carbohydrate Metabolism," is a very general one. There is one special phase of this subject that I wish to review this afternoon; that particular phase which we have been engaged in at our research studies during the last year and a half or two years. It is the relation of substitute carbohydrates in diabetes mellitus, a disease which is very prevalent in the present day and generation.

The pancreas secretes into the alimentary tract the pancreatic juice which is responsible for digestion of the proteins, the fats, and also for the digestion of starches. The tail end of the pancreas, however, secretes into the blood stream a hormone known as insulin, which is responsible for the metabolism or burning of sugars and carbohydrate bodies in general.

Some one has said that there is no more important substance in the world than glucose or grape sugar, because it is upon the combustion or metabolism of this substance that all of our energy and intellectual development depends. In diabetes mellitus there is an impairment on the part of the pancreas to secrete a sufficient amount of insulin into the blood stream to burn the sugar which is ingested in the food. Normally the blood contains 100 milligrams of glucose per 100 cc. In the condition known as diabetes mellitus this amount is increased markedly, sometimes rising to 200 milligrams per 100 cc., and many times going as high as 500 milligrams per 100 cc. When 170 milligrams is reached we reach what is called the renal threshold point. The sugar, instead of piling up in the blood is then secreted by the kidney in the urine and the condition known as glucosuria exists. A very interesting problem presents itself in the case of diabetes which is of a chemical nature; if the diabetic can not burn starch and sugar, possibly there is some other

kind of carbohydrate he can burn. This has been the thought of chemists and medical men for a long period of years. A certain German by the name of Grafe suggested that possibly diabetics could utilize partially burnt sugar "caramel" and treated a large series of diabetics with caramel in place of ordinary starch and sugar. More recently, in this country Joslin and Root and others have found the Jerusalem artichoke, a common weed, contained in its tuber a starch-like substance common to members of the *Compositae* family known as insulin. It differs from starch inasmuch as when it is hydrolyzed it is not converted into glucose, the ordinary sugar found in the blood, but into levulose, a more easily decomposed sugar.

Familiar with the works of Joslin, Root, Carpenter and others, we began to attack this problem from a pharmaceutical standpoint and looked around for other weeds or plants that might contain somewhat rare carbohydrates. We found that artichoke lappa, commonly known as "burdock root," contained a large amount of carbohydrate, presumably, insulin. In fact, the Jerusalem artichoke contains 13 per cent in its moist condition, whereas burdock root, in a moist condition, contains possibly 15 to 25 per cent of insulin hydrolyzable into levulose.

We began our series of experiments by drying the root, grinding it and analyzing for carbohydrate and feeding it to white rats. One series was fed pure fat, another fed on fat plus burdock root; and after a time the rats were killed. The livers were analyzed for glycogen. Glycogen, as you know, is animal starch. It is the way the liver stores carbohydrate. This fact revealed itself when we analyzed the livers of the rats. The livers of those fed on pure fat contained 0.1% glycogen, whereas the livers of those fed on fats plus burdock root contained 0.5%, which indicated that the carbohydrate present in the burdock root was being assimilated by the white rat and stored in the liver as glycogen.

Our next step was to prepare a large series of dogs for metabolic study. These dogs were fed meat, carefully analyzed and weighed and a definite nitrogen content given each one in the form of meat or protein. We analyzed the excreta from the dogs daily, and after a period of four or five days established a metabolic balance. They were taking in a definite amount of nitrogen and excreting a definite amount of nitrogen. When this metabolic balance was established we then

* Read before the Delaware Pharmaceutical Society, Rehoboth, July 10, 1930.

began to feed the dogs, (maintaining the same diet) 100 grams of burdock root per day, containing 50 per cent carbohydrate, and we noticed this interesting fact. In the urine the amount of nitrogen immediately decreased. What did that indicate? It indicated the dog was burning the carbohydrate in the burdock root instead of burning the protein of the meat, which again showed that the burdock root was being absorbed.

We analyzed all of the feces from the dogs for carbohydrates and found only about five per cent of all the carbohydrate administered was found in the feces of the dogs, which indicated that 95 per cent of the carbohydrate administered to the dog was absorbed.

Now it is a well-known fact among physicians when treating diabetics that the danger of the diabetic is acidosis and coma for death often follows.

What causes the acidosis? It is not the failure to burn sugar alone which causes it, but it is the failure of the diabetic to burn fats. If we may use the analogy used by Professor Woodyatt, the fat burns in the flame produced by the sugar, and when the sugar is not burnt the fat will not burn, and when the fat does not burn fatty acids accumulate in the blood, and these are responsible for acidosis.

It may be interesting to know in uncontrolled diabetes the patient has often a tolerance for 150 grams of bicarbonate of soda, a normal person has a tolerance for about 4 grams of bicarbonate of soda.

You see there is a great difference in the acidity of the body fluids.

We wanted to find out whether or not this carbohydrate in burdock root would cause the burning of fat, so we prepared dogs again for metabolic study. We put them on a pure fat diet with a small amount of meat, and the acidosis shortly ensued. Ketone bodies appeared in the urine and the urine became acid and the acidosis was definitely established. We then gave the dogs large quantities of burdock root, and in a few days the ketone bodies disappeared and the dogs were enjoying normal metabolism.

There would be this argument against the usefulness of our experiments had we stopped at this point. We had proved that this material will be absorbed. Well, sugar will be absorbed, starch will be absorbed. What is the value of that? At that point we left animal experimentation and started experiments in the Sinai Hospital with a

group of patients, beginning with normal patients in respect to their endocrine glands.

We gave these patients 100 grams of burdock root in the form of tea, cake or jello—any way we could get it into them without causing nausea. This is what we observed: We took blood sugar readings, half hour, one hour, two, three, and also in five hours. The normal blood sugar of fasting individuals is, as stated before, about 100 milligrams per 100 c. c. (At blackboard.) We followed the blood sugar carefully and this (indicating) represents the curve. When 100 grams were given at the end of three or five hours there was a slight drop to about 90 milligrams.

In other words, when we fed burdock root there was no hyperglycemia observed.

Maybe that was an abnormal individual, possibly he had so much insulin in the pancreas that he would also exhibit hypoglycemia with starch.

So the next day to four or five patients we gave 100 grams of starch and this was our typical blood sugar rise. (Indicating.) This being about 150 milligrams of blood sugar. There was a typical rise of about 40 to 50 milligrams.

Interpreting this experiment it means that we were able to show this material, when given to a normal patient, did not cause the hyperglycemia that starch caused. Then we were ready to start our experiments with diabetic patients.

We had 19 in all who took the burdock root in the form of cake, cereal, drink and jello. If a patient had a normal tolerance of about 60 grams of carbohydrates a day—some are as low as 40 grams per day—they can get along reasonably well on a diet limiting themselves to that small amount of carbohydrate, but that kind of diet does not supply the excess energy which adds the zest to living, and converts existence into intensive living. What the average patient does is, augment this tolerance to 100 grams or possibly 90 grams with insulin, which burns the additional sugar. Instead of doing that with the patients we were experimenting with we simply gave them burdock root. They were getting 50 to 70 grams of starch, which they could tolerate; instead of giving them more starch and insulin we simply gave burdock root, and in no instance did we find that it gave rise to high blood sugar, in no instance was there glycosuria or sugar in the urine.

It is unwise to give a diabetic patient at one time 100 grams carbohydrates—we experimented, using 30 grams. This is what we observed: One

elderly lady (a typical case) above the age of sixty had a fasting blood sugar of 160; with 30 grams of starch the blood sugar went up close to 300, and came down within six hours. With 60 grams of burdock root we obtained a straight line as the blood sugar curve.

This indicated one or two things happened: this was being eliminated in the feces unchanged or being absorbed and not giving rise to a high blood sugar.

To eliminate the possibility of the first condition taking place we analyzed consistently the feces of all patients for carbohydrates, and although we found a small amount in the feces of dogs utilizing burdock root, we have never found any appreciable amount of carbohydrates in the feces of humans using burdock root as the source of carbohydrates.

We found that this material was useful in the treatment of diabetics, and then we were confronted with a very difficult pharmaceutical problem. People soon became tired of the taste of it, they became nauseated. It was dark in color, and it was bitter and disagreeable to take. They could stand it for one or two days, after that they wanted starch again.

We began a large series of experiments, extracting burdock root with different solvents. We have found acetone will remove from burdock root the fat which is disagreeable to the taste. It leaves behind a material which is somewhat like bran. If this is ground and granulated it can be used day in and day out by the diabetic in the form of a cereal, also in the form of cookies. We have patients now who have been getting 40 grams of carbohydrates in the form of burdock root for a period of six or eight months, and now that we have removed the dark color, the bitter principle, they are pleased with the taste of it and do not become nauseated from a prolonged use of it.

Now what have we contributed, if anything, in this particular experiment? We have simply given a drug, Lappa, which, by the way, is used by the Japanese as food, a place in the diabetic's diet. He may use it, not as a food like cellulose, to add bulk to his diet, but each gram of the cereal which we so extracted to contain 50 per cent carbohydrates, adds two calories of actual carbohydrate that can be assimilated by the diabetic as long as he has any insulin at all in his pancreas.—*Maryland Pharmacist*, Oct., 1930.

WOMAN'S AUXILIARY

To the American Medical Association

Ninth Annual Meeting

Philadelphia, June 8-12, 1931

Headquarters, Bellevue-Stratford Roof Garden
Registration Hours, daily 9 A. M. to 5 P. M.

All meetings will begin precisely at the hour indicated. Please be prompt. All women attending the convention, whether Auxiliary members or not, are invited to participate in this entire program.

PROGRAM

Monday, June 8

12:30 P. M.—In honor of national presidents, 1922-1932. Buffet luncheon, subscription, Roof Garden.

2:00 P. M.—Three Round Tables, 35 min. each, 10 min. intermissions, Roof Garden. Subjects: 1. Programs for County Auxiliary Meetings. 2. The Technique and Value of a Committee on Public Relations. 3. History and Archives.

6:30 P. M.—Board dinner, subscription, Red Room.

7:30 P. M.—Board meeting, Red Room.

Tuesday, June 9

9:00 A. M.—General meeting, Roof Garden.

12:30 P. M.—Luncheon (Bellevue Special), Roof Garden.

1:30 P. M.—*Bus trip to Valley Forge. Tea in Log Cabin. Hostesses, Berks, Chester, Delaware and Montgomery Counties, Pa., Auxiliaries—or

1:30 P. M.—*Boat trip on Delaware River, tea on board. Hostesses, Bucks County, Pa., Burlington, Camden and Gloucester Counties, N. J., Auxiliaries—or

2:00 P. M.—Visit to Historical Society of Pennsylvania, 1300 Locust Street. Special Docent Service. Brief Address by Dr. Charles W. Burr, of Philadelphia: "The Daily Life of the Colonial Physician." Special exhibitions on view throughout the convention.

8:00 P. M.—General Meeting of A. M. A., Academy of Music.

10:00 P. M.—Supper dance, Bellevue Ball Room. Hosts, The Philadelphia County Medical Society.

Wednesday, June 10

9:00 A. M.—General meeting and election, Roof Garden.

12:30 P. M.—Auxiliary luncheon, subscription, Rose Garden. Guests and speakers from A. M. A. Music by courtesy of the Delaware State Auxiliary.

2:30 P. M.—Bus trip through historic Philadelphia, Fairmount Park and Germantown. Hosts, The Philadelphia County Medical Society. Tea at "Stenton." Hostesses, New Jersey State Auxiliary.

8:30-11 P. M.—Auxiliary reception, University Museum. Hostesses, Pennsylvania State Auxiliary. Music. Special Docent Service.

Thursday, June 11

9:00 A. M.—Board meeting, Red Room.

10:00 A. M.—Meeting for all State and County Treasurers, Roof Garden.

10:30 A. M.—General Round Table, Roof Garden. Subject: "What Have I Gotten Out of the Convention?" Opening of Question and Suggestion Box.

12:00 M.—Luncheon (Bellevue Special), Roof Garden.

1:00 P. M.—*Bus trip, "Longwood", estate of Mr. and Mrs. Pierre S. du Pont—or

2:30 P. M.—*Visit to Fairmount and Rodin Museums, Special Docent Service.

9:00 P. M.—President's Ball, Benjamin Franklin Ball Room. Hosts, American Medical Association.

Friday, June 12

9:30 A. M.—†Bus trip to Atlantic City, including visit to Convention Hall, ride in wheel chair (1 hour). Luncheon at the Claridge. Atlantic City Auxiliary in charge. Return at 5 P. M. or 10 P. M.—or

11:00 A. M.—Trip through Wanamaker's with luncheon in Crystal Tea Room.

*Bus transportation paid by members.

†Inclusive price, \$5.00.

"As You Like It"

Daily from 9 A. M. to 5 P. M. arrangements may be made at this booth in the Roof Garden for golf, shopping, or any special trips desired, e. g. Historic Churches, Fairmount Park Mansions, Suburban Gardens, etc.

All tickets and invitations must be *procured in advance* in the Bellevue Roof Garden. Only programs will be obtainable elsewhere.

Women at the A. M. A. Meeting, Philadelphia, 8-12 June, 1931

The Woman's Auxiliary to the American Medical Association has been placed in charge of all entertainment of women visitors, and began its labors on June 27, 1930, by engaging the whole Roof Garden of the Bellevue-Stratford Hotel for the period of the convention. All women's activities will centre in this hotel—registration, meetings, luncheons and supper dance, and all excursions will start from the Broad Street entrance. Invitations and tickets must all be procured in the Roof Garden *in advance*, as nothing but programs will be obtainable elsewhere. Members of the A. M. A. are invited to join all excursions, and should register for them in advance in the Roof Garden. Rooms for state headquarters have also been reserved in the hotel, and sponsors will be appointed to look after all women registered from their own states. The list of sponsors will be printed in the program. We take this opportunity to thank the management of the Bellevue for their generosity in placing all these facilities at our disposal free of charge. The chairman of the Women's Hotel Committee is Mrs. Frederick S. Baldi, 2117 Porter Street, Philadelphia, who will be glad to make any desired reservations.

The convention will open with a subscription buffet luncheon in honor of all National Auxiliary Presidents from Mrs. Red to Mrs. McGlothlan, immediately followed by three round tables of 35 minutes each, with 10-minute intermissions, each under expert leadership. The subjects will be:

1. Programs for County Auxiliary Meetings.
2. The Technique and Value of a Committee on Public Relations.
3. History and Archives.

These informal gatherings will be a sort of preliminary canter, designed to bring together those interested in special phases of auxiliary work and give them opportunity to discuss the subject thoroughly during the following days. The national board dinner and pre-convention meeting are scheduled for Monday evening.

A new and, we hope, helpful feature will be a Question and Suggestion Box, to which we beg all with good ideas to contribute. This seems the most practical way of finding out what our members want continued, what discarded, and what plans are indicated for the future.

The regular business sessions will be held on Tuesday and Wednesday mornings. National chairmen will be allowed 10 minutes for their reports, state presidents 3 minutes. Reports to be printed may be as long as desired (in reason), but let no one reporting on the floor imagine these limits an idle jest. Nor will the hours announced on the program be found to mean "about." Have your watches cleaned and regulated, and practice your wrist drill before leaving home. You will need it.

Thursday morning, too, will be a busy one, the post-convention board meetings, a special meeting for state and county treasurers desiring further elucidation of the treasurers' receipt blanks, and at 10:30 an informal round table presided over by the new president, the subject, "What Have I Gotten Out of the Convention?" At this meeting Mrs. McGlothlan will announce her committee chairmen and outline her plans for the coming year, and the subjects in the Question Box will be discussed, a sort of stock taking, closing the year's business and opening the new books.

Philadelphia as a historical and cultural centre is the keynote of the entertainment planned for our guests. Except Monday, all afternoons and evenings will be devoted to pleasure, and a variety of excursions is offered to suit all tastes,

all physiques, and all weathers. They include bus trips to Valley Forge and to Longwood, the beautiful estate of Mr. and Mrs. Pierre S. du Pont, a boat trip on the Delaware, and visits to the Fairmount and Rodin Museums and to the Historical Society of Pennsylvania. The museum authorities are delighted to provide docent service for those desirous of more than a passing glance at their treasurers, and the Historical Society will arrange a special exhibition for the week, including portraits, prints, and engravings, documents, silver, etc., from its unsurpassed collection of Americana. There will also be a brief historical address by Dr. Charles W. Burr, of Philadelphia.

Wednesday will be a field day—the big Auxiliary luncheon, with guests and speakers from the A. M. A. and a beautiful musical program, the gift of the Delaware Auxiliary. In the afternoon the Philadelphia County Medical Society invites the women to be their guests on a bus trip through historic Philadelphia (a 10-minute stop at Independence Hall), Fairmount Park and Germantown to “Stenton,” where the New Jersey Auxiliary invites us all to tea. “Stenton,” the home of James Logan, Penn’s friend, Secretary of the Colony, still stands just as it was built in 1728, the furniture of the period, the garden laid out as described by contemporaries. On Wednesday evening the Pennsylvania Auxiliary invites all visiting ladies to a reception in the superb Chinese Rotunda of the University Museum, a setting probably unsurpassed in any museum anywhere.

This meeting of the A. M. A. in Philadelphia is the first in 30 years, and the County Medical Society, desiring to mark so auspicious an occasion, and also in appreciation of the work of the Auxiliary, invites all members of the A. M. A. and the visiting ladies to be their guests at a supper dance in the ball room of the Bellevue, following the big meeting of the A. M. A. on Tuesday evening at the Academy of Music. The President’s ball at the Benjamin Franklin Hotel on Thursday evening, to which all are invited, will close the formal festivities.

To those still able to rise from their beds on Friday morning there are offered a tour of Wanamaker’s with luncheon in the Crystal Tea Room, or an all-day bus trip to Atlantic City, where the New Jersey Auxiliary will meet them for luncheon at the Claridge. This program includes also a visit to the new Convention Hall, an hour

in a chair on the Boardwalk and plenty of time for window shopping or a swim.

And finally, every day and all day there will be a booth in the Roof Garden inscribed “As You Like It”—Anywhere, where those wishing to golf, shop, go to Garden days, or carry out any other pet project not elsewhere provided for may find information and assistance in making a profitable use of their opportunity.

Will you not reward our efforts by the largest and most enthusiastic women’s attendance in the history of the American Medical Association?

CORINNE KEEN FREEMAN,
General Chairman
(Mrs. Walter Jackson Freeman)

MISCELLANEOUS

Invitation

To the Officers and Members of the Medical Society of Delaware.

Greeting:

The co-operation of every member of your Society is earnestly sought in the interest of a record-breaking registration at the next Convention of the American Medical Association in Philadelphia during the week of June 8th, 1931.

For the first time in the history of the American Medical Association the entire Convention will be housed under one roof, the new Philadelphia Convention Hall being splendidly adequate to accommodate all exhibits as well as all meetings. This will immeasurably conserve the time and energy of those in attendance and will enable them to devote more hours to sight-seeing and recreation.

Register on the first day of the Convention if possible and stay in Philadelphia as long as you can. While the hotel accommodations are ample, make your reservation at once.

Assuring you that the generous hospitality of Philadelphia awaits you,

Faternally yours,
GEORGE A. KNOWLES, M.D.,
Chairman,

Local Committee on Registration,
A.M.A. Convention.
May 4, 1931.

Sussex County Meeting

Dr. George C. McElfatrick, of Wilmington, president of the Medical Society of Delaware, was the principal speaker at the regular monthly meeting of the Sussex County Medical Society, held at the Georgetown New Century Club on Thursday night, April 9th.

A luncheon followed the regular business meeting of the society. Seventeen physicians were present.

The next and final meeting before the summer season will be held in Georgetown on May 14.

Microscope

Francis Ferdinand Lucas, metallurgist and microscopist of Bell Telephone Laboratories, had good news for the members of the American Institute of Mining and Metallurgical Engineers assembled last week in Manhattan. Said he: "There will shortly be delivered in New York a new metallographic equipment. . . . I have recently put it through its paces . . . and I speak with a measure of assurance when I say that we shall see some revolutionary advances in the art of metallography."

The new metallograph, an instrument which scientists use to pry into the minute details of metal structure, is the most powerful microscope ever made. Mr. Lucas himself drew up the designs, took his specifications to the scientists of the famed German optical company, Carl Zeiss Works of Jena. The completed instrument will be set up in the Bell Telephone Laboratories, Manhattan. Like doctors and bacteriologists who study diseased tissue, metallurgists will be able to determine exactly what happens internally when a metal gives way under strain.

More than 50 years ago, the late Dr. Ernst Abbe, optical expert of the Zeiss laboratories, decided that the wave-lengths of visible light were too long to produce perfect small details. Zeiss scientists 25 years later constructed an instrument which utilized only short invisible ultra-violet. But the importance of this microscope was not realized. The few instruments made were regarded as curiosities.

Mr. Lucas, who wanted to see the smallest detail possible, revived the German's idea, designed an ultra-violet microscope for experimentation. Because ultra-violet is invisible to the human eye he had to focus the rays upon an sensitive fluorescent plate, take pictures of the objects under his microscope. He wanted the in-

strument primarily to study metals, but since it was so powerful he and other scientists applied it to living cells. The shallowness of focus allowed them to take horizontal cross sections 1/100,000 of an inch apart.

At this time, the largest ordinary microscopes gave a practicable magnification of 1,500 times. Microscopists thought that the instrument had reached the limit of its development. Because he found ultra-violet difficult to control, Mr. Lucas also worked with visible light, developed an instrument which was about four times as powerful. It magnified 6,000 times. The newest microscope which Mr. Lucas announced last week is twice as powerful, makes possible the small detail of the ultra-violet and the greater magnification of visible light.—*Time*, March 2, 1931.

Our Own Cancer Expert

Mr. Yarostaski 138 L. Oak St. Wil. Del.
Superintendent.

I am an expert in Cordding Cancer. If you have a Patent in your hospital will you please give the case to me. and if I cure the Patent I will give you half of the Patant. I made this medicine, and was seen By the Laboratory Wash. D. C. Will you Please write a letter to me as above to my office. and I will be there Let me know what time, I can see you so we could. take it. over. right.

New Studies in Birth Control

THE JOURNAL has commented previously on the attempt to immunize the female against conception by injection into her body of the sperm of the male either live or treated in various ways. The technic has been varied by investigators in different countries. The difficulty with present methods of birth control is their failure to meet psychologic, esthetic and economic considerations. Individual initiative is lacking and carelessness is a prominent trait in exactly that portion of society for which birth control is most generally advised. One cannot expect of the ignorant, the mentally defective or the destitute the type of foresight and intelligence required for the application of such chemical or mechanical methods of contraception as are now available. These considerations have led to the type of experimentation that is here concerned; namely, a method of biologic control that would be independent of the person treated and would be efficient for at least reasonable periods of time.

In 1926, Oslund reviewed the subject so far as experiments on rats, rabbits and guinea-pigs are concerned and concluded that any delay in conception that occurred in these experiments was the result of a general disturbance of the body by the injection of the substance rather than any specific effect of the injected compound on the male and female elements concerned in conception. The government of Soviet Russia has recognized economic distress as an indication for the prevention of conception and is sponsoring research leading to the devising of a biologic method applicable to women. Kastromium and Kartashev of the Perm Institute of Bacteriology in East Soviet Russia have done extensive experimentation on rabbits and guinea-pigs and have reported definite results in preventing conception in the injected animals following the injection of sperm cells. Jarcho, who has cited their experiments, repeated the work on rabbits in this country and found that, whereas many of the controls became pregnant, none of those that were injected conceived, even over a period of six months. Much more experimentation is needed, however, before anything definite can be said as to the actual merit of this technic even in animals. Other Russian investigators have experimented on human beings. A summary of their results is given by Babadagly, of Odessa, whose paper is available through translation into Spanish. Babadagly cites experiments with this method on human beings by Schorokova, Kolpikof and Lalin. Apparently more than a hundred women have submitted themselves to such experimentation. Of seventy injected by Lalin, five became pregnant during the next five months. In the injections made by Kolpikof, sterility lasted from eight to ten months. Apparently the injections are harmless, but the work done is certainly not sufficient to define either the limitations or the possibilities.

In addition to such investigations as have been mentioned, attempts toward the production of sterility have been made by Haberlandt, who first transplanted into the female the ovaries of pregnant animals and who more recently has used ovarian extracts given by mouth. Haberlandt is convinced that preparations can be developed which will have the power of preventing conception even when taken by mouth. Indeed, German writers are already discussing the legal limitations that should be placed on the sale and distribution of such preparations. Other experimenters are looking into the possibility of pro-

ducing artificial sterility through the limitation of vitamin E in the diet. The work cited is an indication of the extensive interest in this subject throughout the world and would seem to suggest the likelihood of a successful result some time in the future.—*Jour. A. M. A.*, April 25, 1931.

BOOK REVIEWS

Diagnostic Methods in Internal Medicine. By Samuel A. Loewenberg, M. D., Associate Professor of Medicine, Jefferson Medical College. Second Edition. Pp. 1032, with 547 illustrations. Cloth. Price, \$10.00. Philadelphia: F. A. Davis Company, 1931.

That this book has come to a new edition within two years of its first appearance is evidence that it has merit. This edition follows the arrangement of the former one, but contains the latest work on cardiac blood supply and innervation, massive pulmonary collapse, sickle cell anemia, agranulocytic angina, acute mononucleosis, etc. In addition to physical diagnosis the book contains valuable chapters on xray and laboratory diagnosis, and concludes with a most practical chapter on industry, insurance, and malingering. The book can be recommended most highly.

Practical Dietetics in Health and Disease. By Sanford Blum, M. D., head of Department of Pediatrics, San Francisco Polytechnic and Post-Graduate Medical School. Fourth Edition. Pp. 380. Cloth. Price, \$4.00. Philadelphia: F. A. Davis Company, 1931.

This book lists complete dietaries for adults in Part I, and for infants and children in Part II. These lists are complete for each disease, and are so drawn that the patient can and will follow them. Dietaries are given for special cases having two or more diseases (e. g. diabetes and nephritis) where the diet for one may be contraindicated in the other. The work includes a brief discussion of many diseases, from the dietetic standpoint. For the busy practitioner who wants help quickly and accurately this work will be found to be intensely practical.

Hemorrhoids: the Injection Treatment, and Pruritis Ani. By Lawrence Goldbacher, M. D., Philadelphia. Second Edition. Pp. 207, with 31 illustrations. Cloth. Price, \$3.50. Philadelphia: F. A. Davis Company. 1931.

This little manual seems to have struck a responsive cord, as its first edition appeared only last year. The author uses a 5% solution of phenol in cottonseed oil, for both the hemorrhoid and the pruritis cases. His results in pruritis have been very encouraging. Since the text is clear, and the illustrations are on a large scale, there should be no difficulty in following the author's technique. For those engaged in the office treatment of these diseases the book will be quite helpful.

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